

WHAT IS CLAIMED IS:

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1. A network intelligence for a data network, comprising:
 - a call service provider for, when connected to a plurality of data network telephones, facilitating provision of telephony services for said plurality of telephones; and
 - at least one service proxy for, when connected to a plurality of data sources, setting up services between said plurality of data sources and said plurality of telephones.
 2. The network intelligence of claim 1 further comprising at least one configuration data structure for each of said plurality of data network telephones, each configuration data structure correlating user input elements from a telephone with functions.
 3. The network intelligence of claim 1 further comprising a plurality of configuration data structures for each of said plurality of data network telephones, each configuration data structure of a plurality of configuration data structures for a given one of said plurality of telephones correlating user input elements of said given one telephone with functions, different configuration data structures for said given one telephone correlating at least some user input elements of said given one telephone with different functions.
 4. The network intelligence of claim 3 wherein said user input elements comprise key press indications.
 5. A telephony system, comprising:
 - a plurality of telephones connected to a data network;
 - a network intelligence connected to said network for facilitating provision of telephony services to said plurality of telephones and, where said network is also connected to a data source, for providing a data service between said plurality of telephones and said data source.
 6. A telephone for a data network, comprising:
 - an audio processor for converting between analog audio and packets of audio data

according with a data protocol for said data network; and

a plurality of user input elements, each of which, when used, generating an event for transmission on said data network and each of which having an assignable function and not having any dedicated function, and no user input elements other than those of said plurality of user input elements.

7. The telephone of claim 6 wherein said audio processor is for converting between analog audio and audio internet protocol (IP) packets.

8. The telephone of claim 6 further comprising:

a processor connected to an output of each of said user input elements for sending a user element input identification code on said data network identifying a given user element input whenever said given user input elements is used, and
a display connected to an output of said processor.

9. The telephone of claim 6 wherein said user input elements comprise keys.

10. The telephone of claim 8 further comprising a data port and a plurality of drivers, one for each of said audio processor, said user input elements, said display, and said data port and wherein said processor is for receiving control messages from a data port driver and controlling one or more of said drivers based on said control messages.

11. A telephone for a data network, comprising:

a processor;

a user input element associated with permanent function identifying indicia, said user input element operatively connected to said processor and free of any connection to any other operative elements of said telephone;

said processor arranged for, when the telephone is connected to a data network and said user input element is operated, sending a user element operation message on the data network and taking no other action in response to operation of said user input element.

12. The telephone of claim 11 wherein said user input element is a key identified as a mute key.

13. The telephone of claim 11 wherein said user input element is a controller identified as a volume controller.

14. The telephone of claim 11 wherein said user input element is a key identified as a handsfree key.

15. The telephone of claim 11 wherein said user input element is one of a key identified as a headset key and a user interface element identified as a navigation controller.

16. A telephone for a data network, comprising:

a hookswitch connected to a processor and free of any connection to any other operative elements of said telephone;

said processor for, when said telephone is connected to a data network and said hookswitch is operated, sending a hookswitch message on said data network and taking no other action in response to said hookswitch.

17. A method of remotely managing a telephone connected to a data network, comprising:

receiving user input messages from said telephone over said data network, each user input message identifying a user input element actuated by a user;

where one or more user input messages from said telephone indicate a called station, establishing a call between said telephone and said called station utilising a first service provider such that audio data may pass between said telephone and said called station, and updating a state of said telephone to a state of busy with a voice call;

where, after establishment of said call, a further user input message is received and where a current function of a user input element identified in said further message indicates a service provided by a second service provider, if said state of said telephone is not incompatible with said function, sending a control message to said telephone to establish said service provided by said second service provider.

18. A method of managing a telephone connected to a data network, comprising:

based on user input messages from said telephone, establishing a voice call;

based on one or more user input messages from said telephone received during pendency of said voice call, setting up at least one non-telephony data service between said telephone and at least one data source, at least where said at least one data service does not conflict with said voice call.

19. A method of remotely managing a telephone connected to a data network, comprising:

based on a user input message received from said telephone over said data network, retrieving a first configuration data structure for said telephone which correlates user input elements of said telephone with functions;

based on at least one further user input message received from said telephone over said data network, retrieving a second configuration data structure for said telephone which correlates at least some user input elements of said telephone with functions different from those of said first configuration data structure.

20. The method of claim 19 wherein said second configuration data structure correlates a key on said telephone with a mute function, which mute function is for muting a receive path of said telephone.

21. The method of claim 19 wherein said second configuration data structure correlates a key on said telephone with a quit function which quit function is for suspending or terminating a data service.

22. The method of claim 19 wherein said second configuration data structure correlates a key on said telephone with a copy function which copy function is for copying data from one telephone service or data service to another telephony service or data service.

23. The method of claim 19 further comprising:

in conjunction with retrieving each said configuration data structure, controlling a display of said telephone to indicate current functions of said user input elements.

24. A method of remotely managing a telephone over a data network, comprising:
receiving indications from said telephone over said data network;
based on said indications, activating a plurality of data services on said data network;
determining an active one of said plurality of data services and sending control messages to said telephone over said data network so that said telephone can provide said active data services; and
based on further indications received from said telephone over said data network, sending control messages to said telephone to establish a voice call.

25. The method of claim 24 further comprising, if said active one of said data services conflicts with said voice call, terminating or suspending said data service prior to sending control messages to establish said voice call.

26. The method of claim 24 including sending control messages to configure a display of said telephone based on an active one of said plurality of data services.

27. A telephone which communicates via a data network, comprising:
user input elements and user output elements;
a data network interface for communicating with a data network by transmitting packets identifying user input element events and for receiving packets for providing remote control of all user output elements.

28. A telephone which may communicate with a data network, comprising:
a communications interface for communicating with a data network by transmitting and receiving packets;
user interface output elements comprising at least one audio interface;
a controller for controlling all said user interface output elements responsive to control packets received from a network intelligence and for sending packets to a network intelligence responsive to events generated by a user.

29. A computer readable medium, which when loaded into a processor connected to a data network to which at least one telephone is also connected, controls said processor to:

receive user input messages from said telephone over said data network, each user input message identifying a user input element actuated by a user;

where one or more user input messages from said telephone indicate a called station, establish a call between said telephone and said called station utilising a first service provider such that audio data may pass between said telephone and said called station, and update a state of said telephone to a state of busy with a voice call;

where, after establishment of said call, a further user input message is received and where a current function of a user input element identified in said further message indicates a service provided by a second service provider, if said state of said telephone is not incompatible with said function, send a control message to said telephone to establish said service provided by said second service provider.

30. A computer readable medium, which when loaded into a processor connected to a data network to which at least one telephone is also connected, controls said processor to:

based on user input messages from said telephone, establish a voice call;

based on one or more user input messages from said telephone received during pendency of said voice call, set up at least one non-telephony data service between said telephone and at least one data source, at least where said at least one data service does not conflict with said voice call.

31. A computer readable medium, which when loaded into a processor connected to a data network to which at least one telephone is also connected, controls said processor to:

based on a user input message received from said telephone over said data network, retrieve a first configuration data structure for said telephone which correlates user input elements of said telephone with functions;

based on at least one further user input message received from said telephone over said data network, retrieve a second configuration data structure for said telephone which correlates at least some user input elements of said telephone with functions different from those of said first configuration data structure.

32. A network intelligence for a data network, comprising:

a call service provider for, when connected to a plurality of data network telephones, facilitating provision of telephony services for said plurality of telephones; and

a control messenger for selectively sending (i) a control message to enable a user input element of a given telephone of said plurality of telephones to locally control a function at said given telephone and (ii) a control message to disable a user input element of a given telephone of said plurality of telephones to locally control a function at said given telephone.

33. The network intelligence of claim 32 wherein said user input element comprises a volume control.

34. A telephone for a data network, comprising:

a plurality of user input elements, each of which, when used, generating an event for transmission on said data network and each of which having an assignable function and not having any dedicated function; and

at least one timer arranged for timing when receiving an enabling message over said data network.

35. The telephone of claim 34 further comprising:

a labeller for receiving a timer label message over said data network;

a display for displaying a timer label from said timer label message when said timer is timing.

36. A telephone for a data network, comprising:

a plurality of user input elements, each of which, when used, generating an event for transmission on said data network and each of which having an assignable function and not having any dedicated function;

a memory; and

a receiver for receiving a labelling message over said data network and for storing labels from said labelling message in memory.

37. The telephone of claim 36 wherein said labelling message comprises month labels and wherein said memory stores month indications in a numerical format and associates a numerical month indication with a corresponding month label indication of said labelling message.

38. The telephone of claim 36 wherein said labelling message comprises a network intelligence label and wherein said memory stores said network intelligence label and comprising a window manager for causing display of each network intelligence label stored in said memory.

39. A network intelligence for a data network, comprising:

a call service provider for, when connected to a plurality of data network telephones over said data network, facilitating provision of telephony services for said plurality of telephones, said call service provider including a messenger for sending messages with audio parameters over said data network to said plurality of telephones for controlling audio at said plurality of telephones, said audio parameters including transmission and reception filters.

40. The network intelligence of claim 39 wherein said audio parameters further comprise receive loudness rating, send loudness rating, side tone masking rating, transmission and reception filter gain compensation, automatic gain control, and switched loss.

41. The network intelligence of claim 40 wherein said audio parameters further comprise receive volume range, receive volume step size, and default volume level.

42. A telephone for a data network, comprising:

a plurality of user input elements, each of which, when used, generating an event for transmission on said data network and each of which having an assignable function and not having any dedicated function;

a window manager for receiving messages from a plurality of network intelligences over said data network and for (I) passing messages associated with a master network

intelligence; (ii) blocking messages other than alarm messages and data port reservation messages from any other network intelligence.

43. The telephone of claim 42 further comprising an audio processor for converting between analog audio and packets of audio data according with a data protocol for said data network.

44. The telephone of claim 43 wherein said audio processor is for converting between analog audio and audio internet protocol (IP) packets.

45. The telephone of claim 43 further comprising:

a processor connected to an output of each of said user input elements for sending a user element input identification code on said data network identifying a given user element input whenever said given user input elements is used; and
a display connected to an output of said processor.

46. The telephone of claim 45 further comprising a data port and a plurality of drivers, one for each of said audio processor, said user input elements, said display, and said data port and wherein said processor is for receiving control messages from a data port driver and controlling one or more of said drivers based on said control messages.

47. A telephone for a data network, comprising:

a memory for storing message protocols;
a processor for (I) receiving a message over said data network formatted in accordance with a current protocol, (ii) requesting conversion to a new protocol, and (iii) switching to said new protocol.

48. A telephone for a data network, comprising:

a display;
a display memory;
a processor for (I) disabling a portion of a display responsive to a message requesting disabling of a portion of said display and (ii) thereafter storing received display

information for said portion of said display in said display memory until a message requesting enabling of said portion of said display is received.

49. A method of remotely managing a telephone connected to a data network, comprising:
- based on a user input message received from said telephone over said data network, sending a page of data to said telephone for display;
 - receiving a user input element usage message from said telephone;
 - mapping said user input element usage message to a page scroll request; and
 - sending a page scroll message to said telephone to cause a display of said telephone to display a different portion of said page of data.